

Dental Materials Fact Sheet

by the
Dental Board of California
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What About the Safety of Filling Materials? Patient health and the safety of dental treatments are the primary goals of California's dental professionals and the Dental Board of California. The purpose of this fact sheet is to provide you with information concerning the risks and benefits of all the dental materials used in the restoration (filling) of teeth.

The Dental Board of California is required by law* to make this dental materials fact sheet available to every licensed dentist in the state of California. Your dentist, in turn, must provide this fact sheet to every new patient and all patients of record only once before beginning any dental filling procedure.

As the patient or parent/guardian, you are strongly encouraged to discuss with your dentist the facts presented concerning the filling materials being considered for your particular treatment.

* *Business and Professions Code 1648.10-1648.20*

Allergic Reactions to Dental Materials: Components in dental fillings may have side effects or cause allergic reactions, just like other materials we may come in contact with in our daily lives. The risks of such reactions are very low for all types of filling materials. Such reactions can be caused by specific components of the filling materials such as mercury, nickel, chromium, and/or beryllium alloys. Usually, an allergy will reveal itself as a skin rash and is easily reversed when the individual is not in contact with the material.

There are no documented cases of allergic reactions to composite resin, glass ionomer, resin ionomer, or porcelain. However, there have been rare allergic responses reported with dental amalgam (silver fillings), porcelain fused to metal, gold alloys, and nickel or cobalt-chrome alloys.

If you suffer from allergies, discuss these potential problems with your dentist before a filling material is chosen.

Toxicity of Dental Materials

Dental Amalgam (Silver): Mercury in its elemental form is on the State of California's Proposition 65 list of chemicals known to the state to cause reproductive toxicity. Mercury may harm the developing brain of a child or fetus.

Dental amalgam (silver) is created by mixing elemental mercury (43-54%) and an alloy powder (46- 57%) composed mainly of silver, tin, and copper. This has caused discussion about the risks of mercury in dental amalgam (silver). Such mercury is emitted in minute amounts as vapor. Some concerns have been raised regarding possible toxicity. Scientific research continues on the safety of dental amalgam. According to the Centers of Disease Control and Prevention, there is scant evidence that the health of the vast majority of people with amalgam is compromised.

The Food and Drug Administration (FDA) and other public health organizations have investigated the safety of amalgam used in dental fillings. The conclusion: no valid scientific evidence has shown that amalgams cause harm to patients with dental restorations, except in rare cases of allergy. The World Health Organization reached a similar conclusion stating, "Amalgam restorations are safe and cost effective".

A diversity of opinions exists regarding the safety of dental amalgams. Questions have been raised about its safety in pregnant women, children, and diabetics. However, scientific evidence and research literature in peer-reviewed scientific journals suggest that otherwise healthy women, children, and diabetics are not at an increased risk from dental amalgams in their mouths. The FDA places no restrictions on the use of dental amalgam.

Composite Resin: Some Composite Resins include Crystalline Silica, which is on the State of California's Proposition 65 list of chemicals known to the state of cause cancer.

It is always a good idea to discuss any dental treatment thoroughly with your dentist.

Dental Materials- Advantages & Disadvantages

DENTAL AMALGAM (SILVER) FILLINGS: Dental amalgam is a self-hardening mixture of silver-tin-copper alloy powder and liquid mercury and is sometimes referred to as silver fillings because of its color. It is often used as a filling material and replacement for broken teeth.

Advantages

- Durable; long lasting
- Wears well; holds up well to the forces of biting
- Relatively inexpensive
- Self -sealing; minimal-to-no shrinkage and resists leakage
- Generally completed in one visit
- Resistance to further decay is high, but can be difficult to find in early stages
- Frequency of repair and replacement is low

Disadvantages

- Refer to "What About the Safety of Filling Materials"
- Gray colored, not tooth colored
- May darken as it corrodes; may stain teeth over time
- Requires removal of some healthy tooth
- In larger amalgam fillings, the remaining tooth may weaken and fracture
- Because metal can conduct hot and cold temperatures, there may be a temporary sensitivity to hot and cold
- Contact with other metals may cause occasional, minute electrical flow

The durability of any dental restoration is influenced not only by the material it is made from, but also by the dentist's technique when placing the restoration. Other factors include the supporting materials used in the procedure and the patient's cooperation during the procedure. The length of time a restoration will last is dependent upon your dental hygiene, home care, and diet and chewing habits.

COMPOSITE RESIN FILLINGS: Composite fillings are a mixture of powdered glass and plastic resin, sometimes referred to as white, plastic, or tooth-colored fillings. It is used for fillings, inlays, veneers, partial and complete crowns, or to repair portions of broken teeth.

Advantages

- Strong and durable
- Tooth colored
- Single visit for fillings
- Maximum amount of tooth preserved
- Small risk of leakage if bonded only to enamel
- Does not corrode
- Generally holds up well to the forces of biting
- Resistance to further decay is moderate and easy to find
- Frequency of repair or replacement is low to moderate

Disadvantages

- Refer to "What About the Safety of Filling Materials"
- Moderate occurrence of tooth sensitivity; sensitive to dentist's method of application
- Costs more than dental amalgam
- Material shrinks when hardened and could lead to further decay and/or temperature sensitivity
- Requires more than one visit for inlays, veneers, and crowns *May wear faster than dental enamel
- May leak over time when bonded beneath the layer of enamel

GLASS IONOMER CEMENT: Glass ionomer cement is a self hardening mixture of glass and organic acid. It is tooth-colored and varies in translucency. Glass ionomer is usually used for small fillings, cementing metal and porcelain/metal crowns, liners, and temporary restorations.

Advantages

- Reasonable good esthetics
- May provide some help against decay because it releases fluoride Minimal amount of tooth needs to be removed and it bonds well to both the enamel and the dentin beneath the enamel
- Material has low incidence of producing tooth sensitivity Usually completed in one dental visit

Disadvantages

- Cost is very similar to composite resin (which costs more than amalgam)
- Limited use because it is not recommended for biting surfaces in permanent teeth
- As it ages, this material may become rough and could increase the accumulation of plaque and chance of periodontal disease
- Does not wear well; tends to crack over time and can be dislodged

RESIN-IONOMER CEMENT: Resin ionomer cement is a mixture of glass and resin polymer and organic acid that hardens with exposure to a blue light used in the dental office. It is tooth colored but more translucent than glass ionomer cement. It is most often used for small fillings, cementing metal and porcelain metal crowns and liners.

Advantages

- Very good esthetics
- May provide some help against decay because it releases fluoride Minimal amount of tooth needs to be removed and it bonds well to both the enamel and the dentin beneath the enamel
- Good for non-biting surfaces, resistant to leakage
- May be used for short-term primary teeth restorations
- May hold up better than glass ionomer but not as well as composite
- Material has low incidence of producing tooth sensitivity
- Usually completed in one dental visit

Disadvantages

- Cost is very similar to composite resin (which costs more than amalgam)
- Limited use because it is not recommended to restore the biting surfaces of adults
- Wears faster than composite and amalgam

PORCELAIN (CERAMIC): Porcelain is a glass-like material formed into fillings or crowns using models of the prepared teeth. The material is colored and is used in inlays, tooth-veneers, crowns and fixed bridges.

Advantages

- Very little tooth needs to be removed for use as a veneer; more tooth needs to be removed for a crown because its strength is related to its bulk (size)
- Good resistance to further decay if the restoration fits well
- Is resistant to surface wear but can cause some wear on opposing teeth
- Resists leakage because it can be shaped for a very accurate fit
- The material does not cause tooth sensitivity

Disadvantages

- Material is brittle and can break under biting forces
- May not be recommended for molar teeth
- Higher cost because it requires at least two office visits and laboratory services

NICKEL OR COBALT-CHROME ALLOYS: Nickel or cobalt-chrome alloys are mixtures of nickel and chromium. They are a dark silver metal color and are used for crowns and fixed bridges and most partial denture frameworks.

Advantages

- Good resistance to further decay if the restoration fits well
- Excellent durability; does not fracture under stress
- Does not corrode in the mouth
- Minimal amount of tooth needs to be removed
- Resists leakage because it can be shaped for a very accurate fit

Disadvantages

- Is not tooth colored; alloy is a dark silver metal color
- Conducts heat and cold; may irritate sensitive teeth Can be abrasive to opposing teeth
- High cost; requires at least two office visits and laboratory services Slightly higher wear to opposing teeth

DENTAL BOARD OF CALIFORNIA

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The Facts About Fillings

NOTICE OF PRIVACY PRACTICES

THIS NOTICE DESCRIBES HOW HEALTH INFORMATION ABOUT YOU MAY BE USED AND DISCLOSED AND HOW YOU CAN GET ACCESS TO THIS INFORMATION; PLEASE REVIEW IT CAREFULLY.

State and Federal laws require us to maintain the privacy of your health information and to inform you, about our privacy practices by providing you with this Notice. We must follow the privacy practices as described below. This Notice will take effect on April 14, 2003 and will remain in effect until it is amended or replaced by us.

It is our right to change our privacy practices provided law permits the changes. Before we make a significant change, this " Notice will be amended to reflect the changes and we will make the new Notice available upon request We reserve the right to make any changes in our privacy practices and the new terms of our Notice effective for all health information maintained, created and/or received by us before the date changes were made.

You may request a copy of our Privacy Notice at any time by contacting our Privacy Officer, information on contacting us can be found at the end of this Notice.

TYPICAL USES AND DISCLOSURES OF HEALTH INFORMATION

We will keep your health information confidential, using it only for the following purposes:

Treatment: We may use your health information to provide you with our professional services. We have established "minimum necessary or need to know" standards that limit various staff members' access to your health information according to their primary job functions. Everyone on our staff is required to sign a confidentiality statement.

Disclosure: We may disclose and/or share your healthcare information with other health care professionals who provide treatment and/or service to you. These professionals will have a privacy and confidentiality policy like this one. Health information, about you may also be disclosed to your family, friends-and/or other persons you choose-to involve in your care, only if you agree that we may do so.

Payment: We may use and disclose your health information to seek payment for services we provide to you. This disclosure involves our business office staff and may include insurance organizations or other businesses that may become involved in the process of mailing statements and/or collecting unpaid balances.

Emergencies: We may use or disclose your health information to notify, or assist in the notification of a family member or anyone responsible for your care, in case of any emergency involving your care, your location, your general condition or death. If at all possible we will provide you with an opportunity to object to this use or disclosure. Under emergency conditions or if you are incapacitated we will use our professional judgment to disclose only that information directly relevant to your care. We will also use our professional judgment to make reasonable inferences of your best interest by allowing someone to pick up filled prescriptions, x-rays or other similar forms of health information and/or supplies unless you have advised us otherwise.

Healthcare Operations: We will use and disclose your health information to keep our practice operable. Examples of personnel who may have access to this information include, but are not limited to, our medical records staff, outside health or management reviewers and individuals performing similar activities.

Required by Law: We may use or disclose your health information when we are required to do so by law. (Court or administrative orders, subpoena, discovery request or other lawful process.) We will use and disclose your information when requested by national security, intelligence and other State and Federal officials and/or if you are an inmate or otherwise under the custody of law enforcement.

Abuse or Neglect: We may disclose your health information to appropriate authorities if we reasonably believe that you are a possible victim of abuse, neglect, or domestic violence or the possible victim of other crimes. This information will be disclosed only to the extent necessary to prevent a serious threat to your health or safety or that of others.

Public Health Responsibilities: We will disclose your health care information to report problems with products, reactions to medications, product recalls, and disease/infection exposure and to prevent and control disease, injury and/or disability.

Marketing Health-Related Services: We will not use your health information for marketing purposes unless we have your written authorization to do so.

National Security: The health information of Armed Forces personnel may be disclosed to military authorities under certain circumstances. If the information is required for lawful intelligence, counterintelligence or other national security activities, we may disclose it to authorized federal officials.

Appointment Reminders: We may use or disclose your health information to provide you with appointment reminders. including, but not limited to, voicemail messages, email, postcards or letters.

YOUR PRIVACY RIGHTS AS OUR PATIENT

Access: Upon written request, you have the right to inspect and get copies of your health information (and that of an individual for whom you are a legal guardian.) There will be some limited exceptions. If you wish to examine your health information, you will need to complete and submit an appropriate request form. Contact our Privacy Officer for a copy of the Request Form. You may also request access by sending us a letter to the address at the end of this Notice. Once approved, an appointment can be made to review your records. Copies, if requested, will be \$1.00 for each page and the staff time charged will be \$15.00 per hour including the time required to locate and copy your health information. If you want the copies mailed to you, postage will also be charged. If you prefer a summary or an explanation of your health information, we will provide it for a fee. Please contact our Privacy Officer for a fee and/or for an explanation of our fee structure.

Amendment: You have the right to amend your healthcare information, if you feel it is inaccurate or incomplete. Your request must be in writing and must include an explanation of why the information should be amended. Under certain circumstances, your request may be denied.

Non-routine Disclosures: You have the right to receive a list of non-routine disclosures we have made of your health care information. (When we make a routine disclosure of your information to a professional for treatment and/or payment purposes, we do not keep a record of routine disclosures: therefore these are not available.) You have the right to a list of instances in which we, or our business associates, disclosed information for reasons *other than* treatment, payment or healthcare operations. You can request non-routine disclosures going back 6 years starting on April 14, 2003. Information prior to that date would not have to be released. *(Example: If you request information on May 15, 2004, the disclosure period would start on April 14, 2003 up to May 15, 2004. Disclosures prior to April 14, 2003 do not have to be made available.)*

Restrictions: You have the right to request that we place additional restrictions on our use or disclosure of your health information. We do not have to agree to these additional restrictions, but if we do, we will abide by our agreement. (Except in emergencies.) Please contact our Privacy Officer if you want to further restrict access to your health care information. This request must be submitted in writing.

QUESTIONS AND COMPLAINTS

You have the right to file a complaint with us if you feel we have not complied with our Privacy Policies. Your complaint should be directed to our Privacy Officer. If you feel we may have violated your privacy rights, or if you disagree with a decision we made regarding your access to your health information, you can complain to us in writing. Request a Complaint Form from our Privacy Officer. We support your right to the privacy of your information and will not retaliate in any way if you choose to file a complaint with us or with the U.S. Department of Health and Human Services.

HOW TO CONTACT US

Practice Name: David G.H. Yee, DDS
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San Francisco, CA 94121

**ACKNOWLEDGEMENT OF RECEIPT OF DENTAL
MATERIALS FACT SHEET**

I acknowledge that I have received from Dr David Yee, the Dental Materials fact Sheet that
was updated on May 14, 2004

Print Patient Name

Signature of Patient, Parent, or Guardian

Date

**ACKNOWLEDGEMENT OF RECEIPT OF NOTICE OF
PRIVACY PRACTICES**

Notice to Patient:

We are required to provide you with a copy of our Notice of Privacy Practices, which states we may use and/or disclose your health information. Please sign this form to acknowledge receipt of the notice. You may refuse to sign this acknowledgement if you wish.

I acknowledge that I have received a copy of the Notice of Privacy Practices from Dr David Yee.

Print Patient Name

Signature of Patient, Parent, or Guardian

Date